

WHAT IS CLAIMED IS:

1. A process for the surface treatment of an evaporator brazed with aluminum or aluminum alloy, in particular for a liquid coolant circuit in an air conditioner for the passenger compartment of a vehicle, in which the surfaces of the evaporator intended to come into contact with a medium to be cooled are covered with a treatment liquid and said liquid is dried, the latter comprising substances capable of forming after drying on said surfaces an adherent coat having film-forming, hydrophilic and antimicrobial properties, characterized in that said substances comprise one or more substances capable of conferring, on said coat, properties of adherence to the substrate and film-forming, corrosion-inhibiting and hydrophilic properties and one or more substances capable of conferring, on said coat, antimicrobial properties, the ratio by weight of the substances capable of conferring adherence properties and film-forming, corrosion-inhibiting and hydrophilic properties to the substances capable of conferring antimicrobial properties being less than or equal to 2/100, and in that said surfaces are covered with the treatment liquid without a preliminary stage of surface conversion.

2. The process as claimed in claim 1, in which said surfaces are covered with the treatment liquid without a preliminary stage of degreasing or stripping said surfaces.

3. The process as claimed in either of claims 1 and 2, in which the ratio by weight of the substances capable of conferring adherence properties and film-forming, corrosion-inhibiting and hydrophilic properties to the substances capable of conferring antimicrobial properties is between 0.1/100 and 2/100.

4. The process as claimed in one of the preceding

claims, in which said substances do not exhibit a characteristic odor.

5. The process as claimed in one of the preceding  
5 claims, in which said substances comprise, as  
substances capable of conferring, on said coat,  
properties of adherence to the substrate, one or more  
polymers chosen from the polyurethane, epoxy, silicone,  
acrylic, polyimine, polyamine and polyurea types.

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6. The process as claimed in one of the preceding  
claims, in which said substances comprise one or more  
substances capable of conferring, on said coat, at the  
same time, film-forming and corrosion-inhibiting  
15 properties and hydrophilic properties.

7. The process as claimed in claim 6, in which said  
substances capable of conferring, at the same time,  
film-forming and corrosion-inhibiting properties and  
20 hydrophilic properties are polymers chosen from the  
polyurethane, epoxy, silicone, acrylic, polyimine,  
polyamine and polyurea types which are partially  
crosslinked so as to allow hydrophilic groups, such as  
carboxyl, hydroxyl, amine, imine, ketone and aldehyde  
25 groups, to remain.

8. The process as claimed in one of claims 1 to 5, in  
which said substances comprise one or more substances  
capable of conferring, on said coat, film-forming and  
30 corrosion-inhibiting properties and one or more  
substances capable of conferring, on said coat,  
hydrophilic properties, the ratio by weight of the  
substances capable of conferring film-forming and  
corrosion-inhibiting properties to the substances  
35 capable of conferring hydrophilic properties being  
between 20/100 and 50/100.

9. The process as claimed in claim 8, in which said  
substances capable of conferring film-forming and

corrosion-inhibiting properties are polymers chosen from the polyurethane, epoxy, silicone, acrylic, polyimine, polyamine and polyurea types which are crosslinked so as to allow virtually no hydrophilic group to remain and said substances capable of conferring hydrophilic properties are chosen from silica, silica modified by the bonding of organic radicals to silicon atoms, titanium oxide and the hydrophilic varieties of zeolites.

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10. The process as claimed in one of the preceding claims, in which said substances capable of conferring antimicrobial properties are organic or organometallic compounds chosen from copper salts, zinc salts, 2-(n-octyl)isothiazolin-3-one, zinc pyridinethione, thiabendazole and methyl 2-benzimidazolecarbamate.

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11. An evaporator brazed with aluminum or aluminum alloy, in particular for a liquid coolant circuit in an air conditioner for the passenger compartment of a vehicle, in which the surfaces intended to come into contact with a medium to be cooled are coated with an adherent coat comprising one or more substances conferring, on said coat, properties of adherence to the substrate and film-forming, corrosion-inhibiting and hydrophilic properties and one or more substances conferring, on said coat, antimicrobial properties, the ratio by weight of the substances conferring adherence properties and film-forming, corrosion-inhibiting and hydrophilic properties to the substances conferring antimicrobial properties being less than or equal to 2/100, and said surfaces being devoid of any undercoat for surface conversion.

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12. The evaporator as claimed in claim 11, in which said substances are as defined in one of claims 3 to 10.

13. The evaporator as claimed in either of claims 11

and 12, in which the thickness of said coat is between 0.1 and 5  $\mu\text{m}$ .

5 14. The evaporator as claimed in one of claims 11 to 13, in which said coat is capable of limiting the phenomena of adsorption and of desorption so as to prevent the formation of odors.

10 15. The evaporator as claimed in one of claims 11 to 14, in which said coat is insoluble in water.